



# Enhancing operational efficiency for a multinational chemical manufacturer

## Introduction

One of the world's largest polymers and chemicals manufacturing companies, with over 50 sites worldwide, found itself facing significant cybersecurity threats due to its reliance on an outdated Laboratory Information Management System (LIMS) that was not only unsupported but also heavily customized, which complicated system upgrades.

To address these concerns, the company made a strategic decision to replace their outdated LIMS with Thermo Scientific™ SampleManager™ LIMS software, a complete laboratory digital software solution from Thermo Fisher Scientific known for its high configurability, robust security, and reliability.

The primary goal was to facilitate a company-wide implementation of SampleManager LIMS across 25 of its global sites, which included facilities specializing in chemicals, polymers, and research and development.

Alongside their incumbent LIMS, the organization was also using SampleManager LIMS version 12.3 at a limited number of sites. Although newer versions of SampleManager software were already available, the company decided to continue with version 12.3, to provide a more secure project and go-live schedule.

The organization was also using Thermo Scientific™ Chromeleon™ Chromatography Data System (CDS) software for the analysis, interpretation, and management of chromatography data. Part of the project would connect SampleManager LIMS with Chromeleon CDS to eliminate manual data entry and improve data integrity.



## Deployment process

The project implementation started in March 2022 with initial team introductions, followed by a three-day workshop in April to determine requirements. The execution of the project was launched later that year and extended into 2023, indicating the considerable scale and scope of the initiative.

The project reached completion in just over a year, marking its successful end with the final R&D site going live in July 2023. A significant contributor to the project's success was the unwavering commitment of the organization team and their expansive knowledge about SampleManager LIMS, particularly in areas such as data mapping and system integration.



*"This comprehensive implementation not only improved the efficiency and security of our sites, but it has also laid the groundwork for future expansion. We have clear plans to continue this momentum and extend the implementation to an additional 50 plants over the upcoming years. This is an ambitious plan, but it reflects the company's commitment to leveraging advanced technology in enhancing its operations."*

**- IT Manufacturing Product Team Manager**



## Obstacles encountered

Across its global facilities, the organization's existing LIMS had been heavily customized to meet its unique operational requirements. Along with the substantial cybersecurity concerns this presented, the existing LIMS system had other significant challenges, particularly when upgrades were needed. To complicate matters further, the system was no longer supported by its manufacturer, thereby dramatically escalating its security risk.

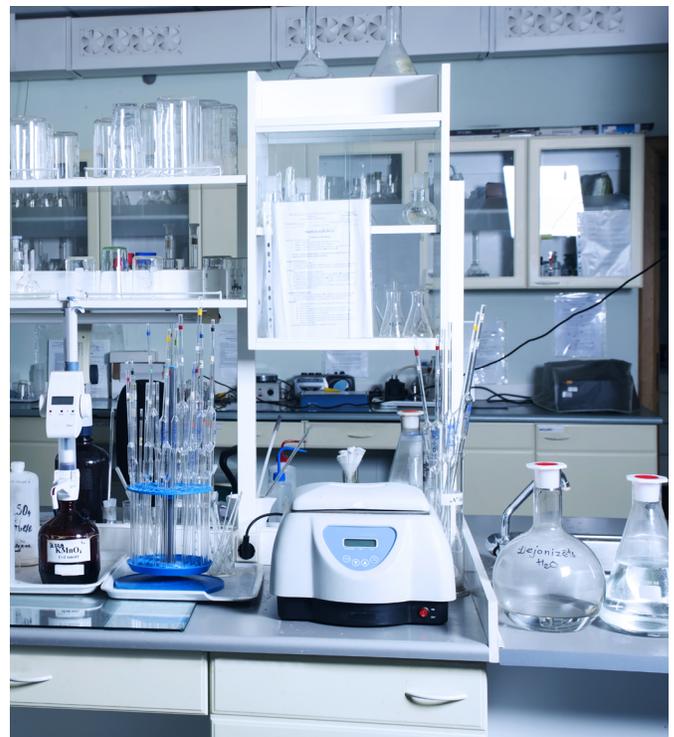


*"A key aspect of this implementation was the integration of SampleManager LIMS with other systems used within our company, specifically Chromeleon CDS software and SAP. This was a strategic move designed to radically enhance our operational efficiency by eliminating unnecessary duplication in data entry because of this integration. Any analytical results generated in the lab can now automatically be reflected in the SAP system, without the need for manual data entry. This crucial step for us not only significantly minimizes the chances of human error in data entry, but also increases data accuracy, and boosts overall operational efficiency."*

**- IT Manufacturing Product Team Manager**

In response to these challenges, the company needed a solution that could not only mitigate these issues but also enhance the functionality and streamline workflows within the laboratories.

- **Specificity of site needs:** The organization initially planned to standardize configurations across sites based on a representative model for each laboratory category—chemical, polymer, and R&D. However, this approach still required tailored configurations, adding a layer of complexity to the project.
- **Rigid deadline:** The transition timetable for all chemical sites was extraordinarily tight, requiring completion within a stringent deadline. The necessity to meet this strict deadline further intensified the pressure on the team.
- **Stakeholder engagement:** Although there was a strong commitment toward the project from the organization's core IT team, the challenge lay in securing adequate time and attention from the super users due to their pre-existing workload. Convincing these users to allocate time to the project presented a considerable challenge to effective project execution.



## Overcoming challenges

The challenges of multiple and unique site requirements were addressed by adopting a tailored approach, which emphasized the importance of striking a balance between meeting specific workflow needs and staying within the project's time and budget constraints. Instead of implementing a standard configuration across all sites, each site was individually assessed, taking into account its specific requirements. This bespoke strategy ensured that each site's unique needs were appropriately met, enabling a smoother implementation of the software.

By recognizing the significance of this balance, the team was able to keep the configuration process focused on meeting the specific needs of each site, while also maintaining efficiency and avoiding unnecessary delays or cost overruns. This approach allowed the team to effectively address the challenges posed by site requirements without compromising the overall project timeline and budgetary constraints.



*"The success of the project can be attributed to the exceptional teamwork displayed by both our team and the organization's team. Despite a tight timeline, the teams demonstrated remarkable commitment and worked tirelessly towards the project's completion. Their collaborative effort was crucial in overcoming the challenges posed by the stringent deadline.*

*Strong leadership also played a significant role in overcoming project challenges. The project manager effectively navigated the project through its various phases, with continuous support from the steering committee and company leadership. This empowered leadership ensured timely resolution of escalated issues, keeping the project on track.*

*Also, the engagement of specialists was crucial. The organization's team involved experts whenever processes became complex. This strategic involvement combined with Thermo Fisher's robust LIMS implementation approaches played a vital role in effectively implementing complex processes."*

**- Stephanie Davis, Senior Project Manager,  
PMP, and Project Implementation Lead, Thermo Fisher Scientific**

## Results achieved

The LIMS transition has yielded numerous benefits for the organization. Notably, it effectively addressed the pressing cybersecurity concerns, the primary motivation for the project. Beyond this, the implementation of SampleManager LIMS has brought about a significant harmonization across the diverse laboratories and plants under the organization's umbrella. The company now operates on a uniform, core system, while still providing flexibility through site-specific configurations. This harmonization has proven to be especially advantageous in scenarios when plants need to exchange samples or analyze comparable products.

Another substantial benefit of deploying SampleManager LIMS has been the enforcement of a standardized naming system. By maintaining consistent nomenclature across all sites, SampleManager LIMS has facilitated easier and more effective data analysis. Moreover, the introduction of SampleManager LIMS has also set the stage for a technological leap—paving the way for the incorporation of artificial intelligence and machine learning methodologies in data analysis, a move that promises further efficiencies.

*"The implementation of SampleManager LIMS has significantly improved laboratory workflows, especially in chromatography-dependent sites. Integration with Chromeleon CDS software has enhanced process efficiency.*

*Compared to our previous LIMS, SampleManager LIMS allows for greater focus on configuring the user experience based on specific business and site needs. It offers features not available in our old system, enabling a more tailored and efficient workflow. Tasks like data searching and reporting are now more efficient, with the ability to perform them directly within the client and easily configure them as required. This has resulted in a highly efficient system.*

*One key advantage of SampleManager LIMS is its powerful capabilities that minimize the need for complex code writing. This provides flexibility and efficiency by leveraging the provided tools and configuring them to suit our needs. During the implementation process, we invested considerable time and effort, conducting numerous meetings and engaging skilled testers. This dedication ensured a thorough and successful implementation.*

*SampleManager LIMS was a logical choice for us, especially since we were already using Chromeleon software. The seamless integration enhanced compatibility and effectiveness in our laboratory workflows. We also have subject matter experts who received comprehensive training on SampleManager LIMS. Their expertise ensures smooth operation and maximizes the system's potential in supporting our laboratory workflows."*

**- Senior Project Analyst**

## Insights and takeaways

The experience of implementing SampleManager LIMS served as a rich learning opportunity for the project team and offered numerous insights they can apply to future projects.

One of the major lessons learned was the critical role clear communication plays in project management. The importance of setting clear and realistic expectations about the project's scope from the onset became evident. Such expectations helped define the roadmap for the project and assisted in aligning the team's efforts towards a common goal.

Also crucial was understanding the level of effort required from their side for the implementation and maintenance. This was key to efficient resource allocation, making certain that personnel and assets are in place to support the project throughout its lifecycle.

Going forward, the organization can apply this learning to future implementations. The company plans to strengthen its approach to managing expectations, with an emphasis on open and frequent communication. This would involve clearly communicating project requirements to all stakeholders, the expected timelines, as well as the resources needed for the successful completion of the project. By applying these valuable lessons learned from the SampleManager LIMS implementation team, they are well-positioned to support any future projects.

## Conclusions

The successful transition to SampleManager LIMS is a key milestone in the organization's technological and operational evolution. The shift has significantly improved operational efficiency and productivity through streamlined and reliable processes. Furthermore, data integrity has been enhanced through the implementation of a standardized naming system and the elimination of duplicate data entries, leading to a more dependable and reliable data management system. Importantly, the adoption of SampleManager LIMS has prepared the organization for future advancements, with the system's integration capabilities and flexibility providing a solid foundation for integrating innovative generative technologies, potentially unlocking unprecedented levels of lab operation efficiency and analytical depth.

This case study serves as a testament to the transformative potential of SampleManager LIMS. It illustrates how this powerful tool can effectively overhaul lab operations and workflows, delivering substantial benefits to businesses. The success story offers a valuable blueprint for other businesses contemplating a similar transition, demonstrating the significant advantages that can be reaped from the effective implementation of SampleManager LIMS.

Learn more at [thermofisher.com/samplemanager](https://thermofisher.com/samplemanager)

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